

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 03 - Advanced Technology Development				PE NUMBER AND TITLE 0603444F MAUI SPACE SURVEILLANCE SYSTEM				PROJECT 4868	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4868 Maui Space Surveillance System	18,905	27,020	6,472	6,452	6,436	6,524	6,611	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> This program funds the operation and upgrading of the Maui Space Surveillance System (MSSS) in Hawaii. Note: In FY 2002, Congress added \$17.4 million for the MSSS and \$3.4 million for Pan-STARRS.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$1,950 Enhanced operational and research utility of MSSS data products. Developed, analyzed, and tested non-imaging space object identification tools for the Advanced Electro-Optical System (AEOS) sensors. Conducted studies in the feasibility of the use of the laser guidestar, and in applications for active tracking. Continued atmospheric characterization and advanced imaging algorithm development to support real-time post processing.</p> <p>(U) \$10,785 Provided technical support to research, development, and operational users and visiting experimenters using the MSSS assets.</p> <p>(U) \$3,857 Conducted upgrades for MSSS. Completed observatory control system upgrades on the 0.8 meter beam director telescope. Completed adaptive optics upgrades, sensor enhancements, and tool development. Demonstrated AEOS/MSSS enhancements through characterization and test. These upgrades significantly increased the ease-of-use and data turn-around for these telescopes.</p> <p>(U) \$2,313 Supported the Near Earth Asteroid Tracking mission and follow-up role on AEOS and lost satellite search. Continued non-imaging space object identification efforts and evaluation of MSSS systems to detect smaller/fainter objects.</p> <p>(U) \$18,905 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$3,383 Enhance operational and research utility of MSSS data products to include thermal mapping of long-wave infrared imagery. Study the feasibility of daylight imaging and active tracking with AEOS to include effects on sensor performance and safety issues. Analyze satellite orientation data for detailed characterization of space reconnaissance threats. Optimize exploitation tools and data dissemination architecture.</p> <p>(U) \$14,295 Provide technical support to research, development, and operational users and visiting experimenters using the MSSS assets.</p> <p>(U) \$3,944 Conduct and demonstrate AEOS/MSSS upgrades and enhancements. Complete the AEOS long-wave infrared imager upgrade background</p>									
Project 4868		Page 1 of 3 Pages					Exhibit R-2 (PE 0603444F)		

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002	
BUDGET ACTIVITY 03 - Advanced Technology Development	PE NUMBER AND TITLE 0603444F MAUI SPACE SURVEILLANCE SYSTEM		
		PROJECT 4868	

(U) **A. Mission Description Continued**

(U) **FY 2002 (\$ in Thousands) Continued**

subtraction effort by operationalizing the test code (algorithm) which will produce accurate radiometric data, temperature maps, and imagery. Upgrade radiometer to allow for simultaneous four-channel capability and increased processing speed. Improve resolution of the sensor on the 1.6-meter telescope by replacing the tracking system. Improve the reliability of the observatory control system to increase acquisition rate of targets.

(U) \$2,030 Continue follow-up role on Advanced Electro-Optical System (AEOS) and lost satellite search and non-imaging space object identification to detect and characterize smaller/fainter objects.

(U) \$3,368 Execute the Pan-STARRS effort. Define technical concept for execution of Pan-STARRS to include the development of advanced charged-coupled, devices (CCDs) to detect very-dim space objects up to the 24th magnitude, a telescope system that uses the CCD detectors, and the hardware/procedures to collect and display the data. Initiate data archiving to support future data collection

(U) \$27,020 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$1,072 Enhance operational and research utility of the Maui Space Surveillance System (MSSS) data products. Develop improved exploitation tools and new data fusion techniques to provide real-time information and optimize system for small satellite data collection.

(U) \$4,232 Provide technical support to research, development, and operational users and visiting experimenters using the MSSS assets.

(U) \$1,168 Conduct upgrades for MSSS. Demonstrate AEOS/MSSS enhancements in daylight imaging to include partial daylight operations on the AEOS increasing availability for high priority taskings and new areas of research.

(U) \$6,472 Total

(U) **B. Budget Activity Justification**

This program is in Budget Activity 3, Advanced Technology Development, since it enables and demonstrates technologies for existing system upgrades and/or new system developments that have military utility and address warfighter needs.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	19,445	6,484	6,488	
(U) Appropriated Value	19,625	27,284		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-264		

Project 4868

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
03 - Advanced Technology Development		0603444F MAUI SPACE SURVEILLANCE SYSTEM		4868	
(U) C. Program Change Summary (\$ in Thousands) Continued					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
	b. Small Business Innovative Research	-461			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-79			
	e. Rescissions	-180			
(U)	Adjustments to Budget Years Since FY 2002 PBR			-16	
(U)	Current Budget Submit/FY 2003 PBR	18,905	27,020	6,472	TBD
(U)	<u>Significant Program Changes:</u> Not Applicable.				
(U) D. Other Program Funding Summary (\$ in Thousands)					
(U)	Related Activities:				
(U)	PE 0602605F, Directed Energy Technology.				
(U)	PE 0603605F, Advanced Weapons Technology.				
(U)	PE 0602500F, Multi-Disciplinary Space Technology.				
(U)	PE 0603500F, Multi-Disciplinary Advanced Development Space Technology.				
(U)	PE 0603883C, Ballistic Missile Defense Boost Phase Segment.				
(U)	This project has been coordinated through the Reliance process to harmonize efforts and eliminate duplication.				
(U)	<u>E. Acquisition Strategy</u> Not Applicable.				
(U)	<u>F. Schedule Profile</u>				
(U)	Not Applicable.				

Project 4868

Page 3 of 3 Pages

Exhibit R-2 (PE 0603444F)